

REMARKS

Review and reconsideration of the application in view of Applicants' amendments and remarks are respectfully requested. Claim 1 is amended, and is supported on page 8, lines 13-21, of the application. Claim 9 is canceled without prejudice to or disclaimer of the subject matter therein.

Applicants thank Examiner O'Farrell for consideration and acknowledgement of the references submitted by Applicants with the Information Disclosure Statement submitted August 29, 2002.

Claim 9 is objected to under 37 CFR 1.75(c) as allegedly being of improper dependent form. It is alleged that Claim 9 fails to further limit the subject matter of Claim 1 from which it depends. Claim 9 is also rejected under 35 USC §112, second paragraph, as allegedly failing to limit the subject matter of a previous claim. Claim 9 is herein cancelled, rendering the objection and rejection moot. Withdrawal of the objection under 37 CFR 1.75(c) and the rejection under 35 USC §112, second paragraph, are in order and respectfully requested.

Claims 1-9 are rejected under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Patent Office indicates at pages 2-3 of the Office Action that section c of claim 1 is unclear for failure to explain what is accelerated, how acceleration occurs, whether acceleration is temporary or continuous, and how linearization of the DNA is achieved. Applicants traverse the rejection for at least the following reasons.

Applicants note claim 1, section c, herein is amended to clearly state that the DNA is in a fluid carrier, and it is the fluid flow that is accelerated to cause stretching of the DNA, as supported on page 8, lines 13-21, of the application. Various exemplary methods of accelerating fluid flow are set forth in the specification at page 8, lines 16-17. The initial acceleration of the fluid as it enters a channel pulls the DNA along the channel, stretching it as it enters the channel. Applicants submit the amendment to claim 1 clarifies the invention. Reconsideration and withdrawal of the rejection are in order and are respectfully requested.

Claims 1-6 and 9 are rejected under 35 USC §102(b) over Bensimon et al. (US 6,054,327). Applicants traverse the rejection for at least the following reasons.

Bensimon et al. discloses a method of aligning macromolecules on a surface of a support, wherein one end of the macromolecules is secured to the surface, and the other end is in solution in a solvent. The method consists of moving the solvent away from the secured end of the macromolecule on the support, thereby pulling the macromolecule to a stretched position. Contrary to the assertions of the Patent Office, Bensimon et al. does not disclose or suggest movement of the macromolecule or solvent from a reservoir through a channel. Fig. 6 of Bensimon et al., relied on by the Patent Office, shows movement of the meniscus of the fluid between two plates. The area between the plates could be considered a channel, but there is no reservoir from which the macromolecule is moving into the channel. Further, because Bensimon et al. requires attachment of at least one end of the macromolecule to a support, there can be no movement of the macromolecule from one place to another. The macromolecule can only be stretched from the point of attachment. Bensimon et al. does not disclose or suggest passing a hybridized DNA complex from a reservoir in a microfluidic device through a channel. For at least the above reasons, reconsideration and withdrawal of the rejection are in order and are respectfully requested.

Claims 1-6 and 9 have been rejected under 35 USC §102(e) as being anticipated by Chan et al. (Pre Grant Publication 2003/0059822, "Chan-1"). Claims 1-9 have been rejected under 35 USC §102(e) as being anticipated by Hannah et al. (US Patent 6,767,731 B2). Applicants traverse the rejections for at least the following reasons.

Chan-1 was filed September 18, 2002, and has priority under 102(e) to September 18, 2001. Hannah et al. was first filed in the United States August 27, 2001. Applicants conceived the invention before the applicable 102(e) dates of the applied references, as shown in the attached 37 CFR 1.131 Declaration of co-inventor Zhihao Yang. The invention was first recorded in the notebook of Mr. Yang on June 5, 2001 (European date notation), and was entered into a tracking database (Invention Tracker) and submitted to the legal department

of Eastman Kodak Company for preparation of the currently pending patent application in August of 2001. Preparation of the application occurred between August 27, 2001, and the filing date of February 28, 2002.

For at least the above reasons, as shown in the Declaration and documents attached thereto, Applicants date of conception pre-dates the applied references of Chan-1 and Hannah et al., and Applicants diligently pursued a constructive reduction to practice in the form of the currently pending patent application. Reconsideration and withdrawal of the rejections are in order and are respectfully requested.

Claims 1-9 have been rejected under 35 USC §103(a) as being unpatentable over Bensimon et al. in view of Chan (PCT/US00/22253, International Publication Number WO 01/13088 A1, "Chan-2"). Applicants traverse the rejection for at least the following reasons.

Combining Bensimon et al. with Chan-2 still requires one end of the macromolecules to be secured to a surface, and the other end to be in solution in a solvent to stretch the macromolecule, or the teaching of Bensimon et al. is not accomplished. Because Bensimon et al. requires attachment of one end of the macromolecule, even combining Bensimon et al. with Chan-2 does not disclose or suggest passing a hybridized DNA complex from a reservoir in a microfluidic device through a channel. For at least the above reasons, reconsideration and withdrawal of the rejection are in order and are respectfully requested.

Claims 7-9 have been rejected under 35 USC §103(a) as being unpatentable over Chan-1 in view of Chan-2 (PCT/US00/22253, International Publication Number WO 01/13088 A1). Applicants traverse the rejection for at least the following reasons.

As discussed above, Applicants conceived of the current invention before the 102(e) date of Chan-1, removing Chan-1 as a reference. Chan-2 does not teach or suggest all the features of the claimed invention. Reconsideration and withdrawal of the rejection are in order and are respectfully requested.

For at least the reasons set forth above, Applicants submit all of Claims 1-8 are in condition for allowance. Prompt and favorable action in the form of a Notice of Allowance are respectfully requested.

Should the Examiner require anything further, or have any questions, the Examiner is asked to contact Applicants' undersigned representative.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Kathleen Neuner Manne', written over a horizontal line.

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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.